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The Wild World of Chris Rowlands

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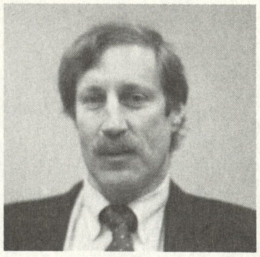
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Editor's Note

In last month's *Connecticut Environment*, our lead story was about the work of Doug Radziewicz to protect the wolf. The wolf has a long history of persecution at the hands of man, and we hope our article has been of some help in dispelling misconceptions about this remarkable animal. There was, however, a very important dimension in the wolf story which may not have been absolutely clear. The point here is simply this: *The wolf is a creature of the wild; it should never be treated as a pet.*

The two wolves in our recent article were initially brought to this state illegally, and kept unsuccessfuly as pets. One was confiscated by the DEP's Division of Law Enforcement, and the other was voluntarily turned in by its owner. Wolves are not pets. It is a disservice to the wolf to force it into this position, and it exposes humans to serious danger. Doug Radziewicz is a wildlife professional. He has a special background, special talents, special facilities at his disposal, and he does not consider the wolves as pets. It would be a grave error to think that the relationship he has with the wolves can or should be available to anyone.

In Stamford, an arrest was made recently when someone from out of state tried to sell hybrid wolf puppies -- half-wolf, half-dog. Stronger and more intelligent than a dog, these hybrids have been linked to the death of at least one child. It is speculated that they may be used by drug dealers and street gangs.

To treat a wolf as a pet, to treat it any way which does not absolutely respect its wildness, is not only morally wrong, it is also a crime. We are sorry if we didn't make this all-important point in our recent article. We are making it now.

R.P.

Interview with Joel Gordes

A state legislator takes a hard look at energy and the future.

CE: Energy is a topic which is going to get more critical with every passing year, both in Connecticut and in the world. State Representative Joel Gordes has been a long-time advocate of renewable energy. The word on him is that he's not afraid to tell you what's on his mind or to take risks when he thinks he's doing something right. Thank you for talking with us today.

JG: Thank you. It's a pleasure to be here.

CE: You have a long history of environmental awareness and activism. How did that start?

JG: I guess environmental awakening started around 1970. While most people were busy celebrating Earth Day that year, I was in Vietnam flying combat missions. And, looking down from the airplane -- I was doing reconnaissance -- you could see bomb craters, like the craters of the moon, filled in with water. There was total destruction of the environment. That got me thinking more deeply than I had before. So I had a little bit different entry into the environmental movement.

CE: You also spent some time in Iran.

JG: Yes, in 1971. I did ferry an aircraft over to Iran for the Iranian Air Force and trained Iranian troops here in this country. During that time it surfaced in my mind that the reason we were doing this was, in large part, to protect the very fragile pipeline of oil from that area of the world.

CE: And you had a sense of what was looming around the corner, even at that point.

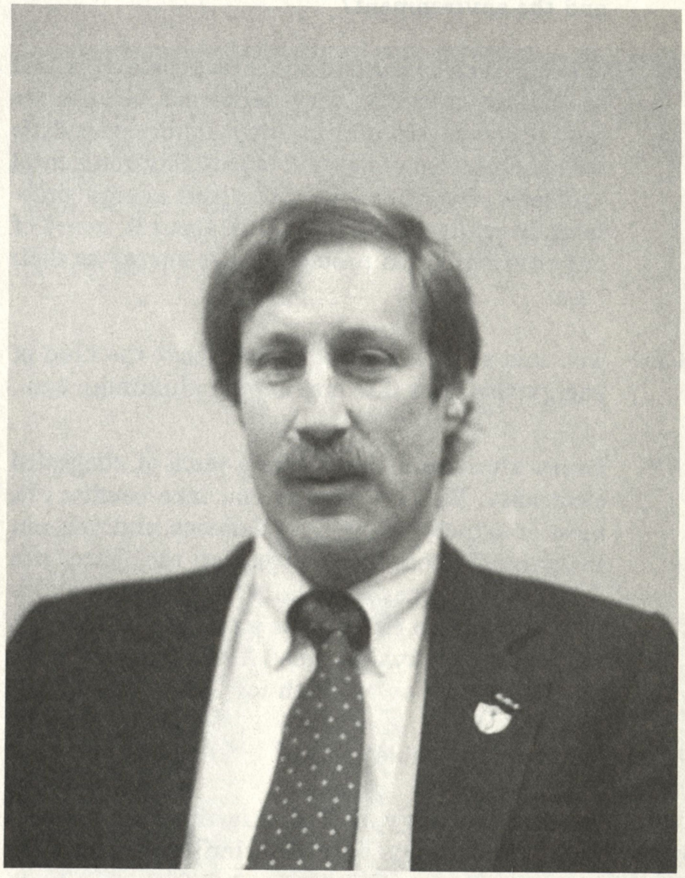
JG: Yes, I did, including the idea that eventually there would be a revolution there.

CE: Do we have an energy crisis in this country?

JG: Yes and no. If we were to ask overall is there an energy problem, the answer is no, because there are many forms of energy. But, do we have an oil crisis? Do we have a gas crisis? Yes, I do believe we have a possible fuel crisis when we talk about those two specific fuels.

CE: So our problem then is dependence on one particular form of energy.

JG: I would say that our overdependence on oil in general is probably the biggest problem we face.



"The destruction of the environment in Vietnam got me thinking more deeply than I had before."

CE: So, we are going to have to break that chain of dependence. How long have we been so dependent on oil?

JG: About 1859 we started to push oil, but dependence actually didn't start until later. But, yes, in essence it's something that is unhealthy for our balance of trade as well as for our national security.

CE: Do you see the energy problem as one of depletion or as one of pollution? Are we going to run out of oil, or are we afraid of how dirty it's making the world?

JG: That's a very good question. I think it's a little bit of both. I think that number one, we have to be concerned in the short term, in the immediate term with the pollution aspect of it. I think we have to look at things like acid rain which I think most people are aware of. And then, the idea of running out of it, of course, would open up a whole new world to most people living today in the United States. Not in the rest of the world, because they have a much lower energy standard than ourselves. But, it's going to be a good question to see which one becomes more important.

CE: How intimate is the connection between energy and the environment?

JG: We're in such a world of specialists these days, and specialization can be very dangerous because we tend to compartmentalize things in nice neat little boxes. Over here we talk about environmental problems. Over here we talk about energy problems. In reality, when we think about it, many of our environmental problems have energy as their base.

CE: You said something fascinating about the kind of energy that goes into creating an aluminum can.

JG: Every aluminum can is like a piece of congealed electricity. What you do is you take bauxite ore, most of which we get from Jamaica, and you put in two electrodes, and you let the juice run through, and that's basically how you get aluminum. And so every time somebody throws an aluminum can away, a good deal of imbedded energy is thrown away with it.

CE: What is renewable energy?

JG: Renewable energy originates in the sun. We have direct solar energy, we have wind power – the sun makes the winds blow through differential heating and cooling of the earth. We also have hydroelectric power, which is a renewable energy source derived from the hydrological cycle in which the sun plays a prominent role. Even what we call biomass, which includes wood energy, comes from the sun. These are renewable energy sources, and all of them have their origin in sunlight.

CE: As opposed to oil and coal which are not renewable.

JG: That's correct. Those are the fossil fuels, and we consider them to be depletable resources. Natural gas is usually added in there too.

CE: What about nuclear energy?

JG: Nuclear energy, back about 1954 when they passed the atoms for peace program, was supposed to be too cheap to meter. But it was very heavily subsidized by the tax dollar, so that you were paying for it in your taxes. And there were many things that were overlooked. To me, it is still a technology offering many problems; some still have to be resolved, some are technical problems, and some are political problems. So I think that it's a technology you have to be ever watchful of.

CE: A while ago there was some thought that we were entering a new era with the cold fusion breakthrough. How did you see that?

JG: I had questions about what temperature was available through cold fusion. In order for fusion to be commercially useful, you have to obtain a temperature high enough to produce steam to run turbines, and there was no indication that it was reaching anywhere near such temperatures. It is interesting, it should be pursued in research and development, but I don't think commercially it's going to be available at any time soon.

CE: So for better or worse, we're going to have to figure out a way out of problems with what we have right now.

JG: I wouldn't count on any miracles happening. That's the way I would put it.

CE: For so many years alternative energy was the domain of the counterculture, yet here you are, a state legislator, definitely mainstream, deeply concerned with it. How did that transition take place?

JG: In my own case, I was an advocate of solar energy and renewable energy long before I was a legislator, and I just continued to do it as a legislator. But there was a certain counterculture connotation to it in the early '70s. I think once it became more industrialized and accepted within the mainstream, you started to see more of it taking place.

Again, once people were starting to make a profit from it, you saw people marketing it in a different way. Today, it's to the point where it is fairly mainstream. Every time you see a sunroom, that's a form of solar energy. If, and I will stress *if*, it is applied correctly. Too many times you see people putting it on the northern side of a house and absolutely blowing away any gains they might have had. Their heart is right, but their orientation is wrong. And it's a matter of education. This interview is another form of education to let people know that many things can be made to work using solar energy.

CE: Would you say that consciousness of this sort of thing has grown?

JG: Oh, it has, definitely. But the problem we see right now is we're in a time of relatively low oil prices. What was learned before and what was hot in the mainstream is again taking a step back because of the low oil prices that we're seeing.

CE: We're being lulled into a false sense of security.

JG: A very complacent attitude that's going to really come back and bite us. That's my belief. So I think that we have to re-educate people in this respect.

CE: I'd like to ask you to look into the future. What kind of scenarios do you see looming ahead, as far as energy is concerned?

JG: I wish I could be optimistic, but I'm afraid that because our dependence on foreign oil now is somewhere between 50 and 54 percent, I can't say that I am optimistic. Our own domestic reserves are very low and I think you are going to see a point in the mid-'90s where we're going to be domestically in a crisis position and OPEC is in a threatening position, which could have some very, very bad consequences for us.

CE: Are we in the process of reducing dependency?

JG: No, unfortunately we are not. It's beginning to grow again, and this is really the first time we've seen it rising up at this rate. So I am doubly concerned, particularly since we know that the world's oil reserves are predominantly (60 percent or so) in the Persian Gulf area.

CE: We didn't quite learn the lesson of 1973 then.

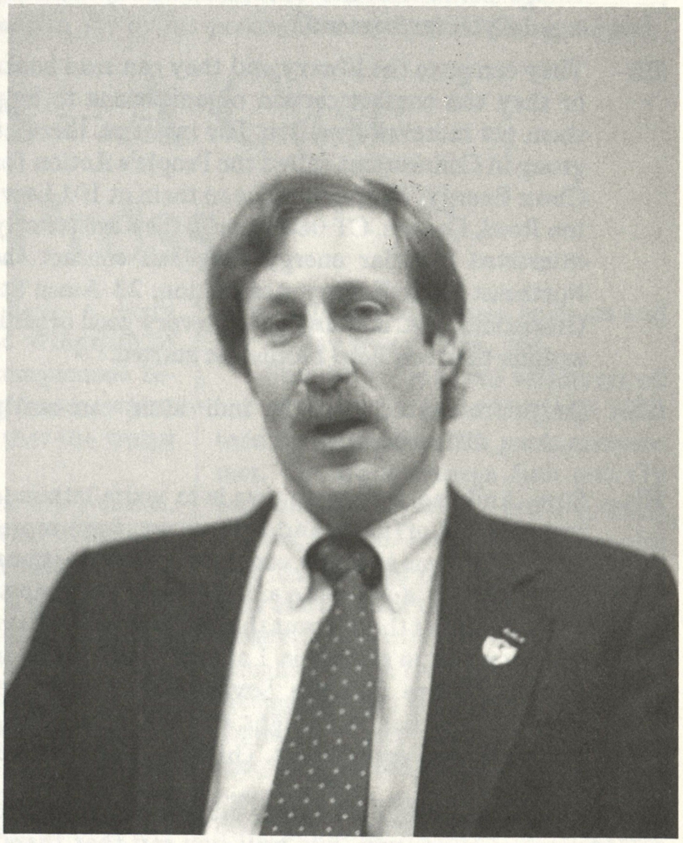
JG: '73, '79. I think we are going to see another lesson to be learned and if it does, sincerely, we're in deep trouble.

CE: Are any efforts at all having a dent on what might happen?

JG: I think we're seeing isolated types of things. In the state of Connecticut, for instance, we're looking at the energy in state buildings. Certain individuals and groups are individually pushing energy self-reliance or pushing renewable energy sources. But at a national level, at this point in time, we do not have a national energy policy. They are taking testimony now for a national energy strategy, but I am not optimistic about the direction they will be taking.

CE: And yet you are still working and talking. Is it the focus of your efforts to reach the individual?

JG: A great deal. And I think again, this is a wonderful opportunity to talk to the individual and say that it all starts with you. Because it all starts with me. Every action -- we do thousands of actions each and every day that concern energy. Whether it is shaving and how we use the hot water that may go down the sink or how we drive our automobiles or what automobiles or how we heat our houses. We take those thousands of actions each day by each individual and multiply it times 240 million people, and you can make a difference.



"Because our dependence on foreign oil is now between 50 and 54 percent, I can't say that I'm optimistic."

CE: So you don't buy it when someone says, "I can't make a difference because nobody else is operating at any kind of enlightened fashion, it doesn't matter what I do."

JG: That's a cop-out. I hate to see the softness that has crept into this country and the idea that people have to have the conveniences in their throw-away society, because that fosters a very poor attitude for our conservation of resources.

CE: I think it's pretty clear that you haven't copped out. What kind of things have you done in the past couple of years that you're proud of, without embarassing you?

JG: Well, I'm proud on a couple of different scales. On a macro scale, I'm very proud of some of the legislation that we got passed up at the State Capitol to get more money into the Energy Conservation Loan Program. Or to extend the corporate tax break for renewable energy industries that may come into the state. And then on the micro scale, I'm very proud over the years of the probably between 200 and 300 people that I've worked with personally in helping them design their solar homes. That to me is one of the best accomplishments that I can point to that I'm very proud of.

CE: Suppose someone wants to do something to make things better for the future. What specifically would you recommend?

JG: They can go to the library and they can read books or they can contact certain organizations to help them get more information. For instance, there's a group in Connecticut called the People's Action for Clean Energy. They can write to them at 101 Lawton Road, Canton, CT 06019, or if they are strictly interested in solar energy they can contact the Northeast Solar Energy Association, 23 Ames St., Greenfield, MA. So those are two very good organizations that can help people get started.

CE: So you're saying that the individual can really make a difference.

JG: Sure. And one way to do that is to write letters to your elected officials and believe me, state representatives, state senators, congressional delegations, everybody. It *does* make a difference. You know, the wonderful thing about this country is *you* have the potential to change it. Look at those people in eastern Europe and the Soviet Union who are fighting for that very right and yet here, people again are very complacent. Things can be changed.

CE: I know you tend to be a little bit pessimistic in your view of the future, but will you say that there's some possibility of us getting through this looming nightmare?

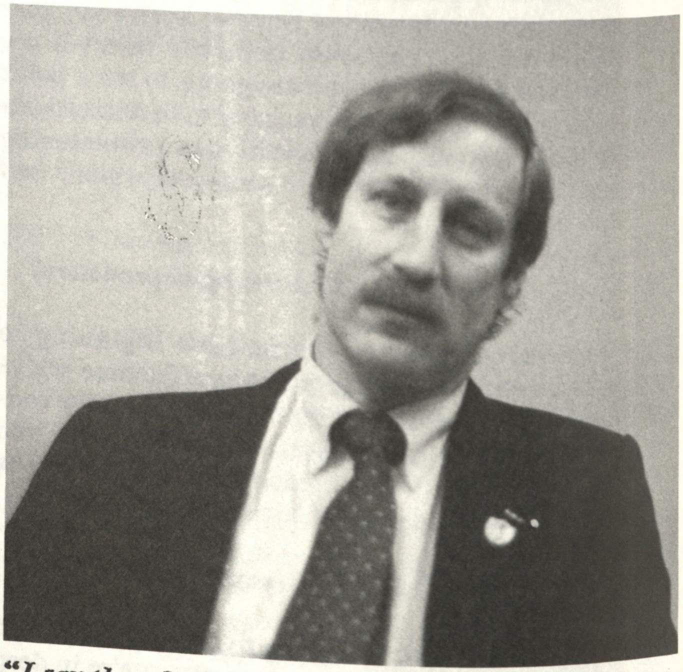
JG: There is a possibility, I'm not going to deny that. I don't mean to be all doom and gloom. I know most politicians try to leave the crowd happy and feeling pleasant and warm. But I am not going to do that. I'm going to say you can go ahead and make a difference, but it's going to take everybody pulling together to drop this dependency that we have, and it may take a drastic change in our lifestyle of what we have become accustomed to since 1950, let's say.

CE: We're going to have to look at some hard truths, and you're not afraid to proclaim those truths.

JG: No, I'm not, but I'm afraid that, again, there will be certain people's toes that will be stepped on – those who try to sell people convenience at the cost of our resources. I think people have to look at that in a new light. Are they helping us or are they hurting us?

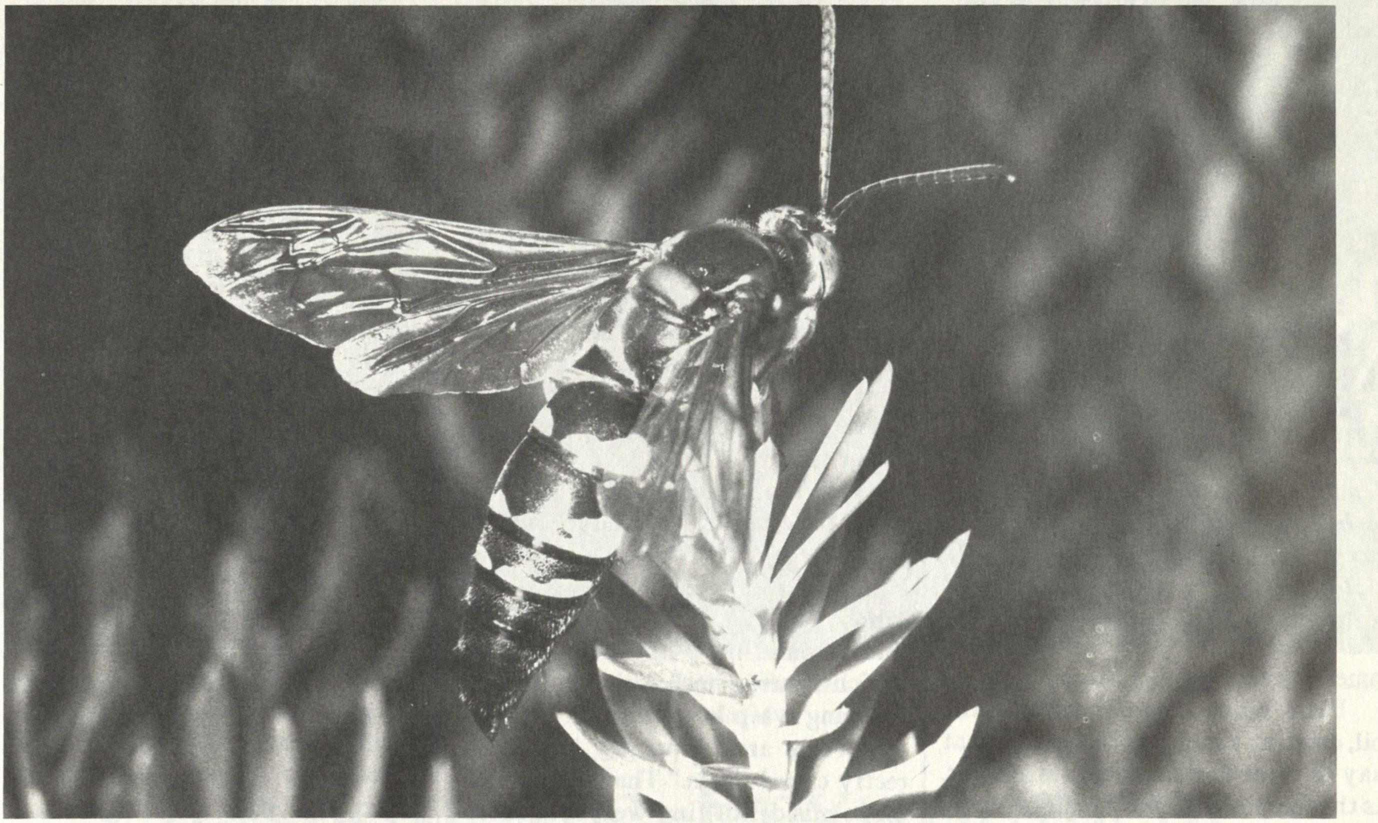
CE: Could you sum up what you think that the people of Connecticut should know about this critical problem?

JG: I think they should realize that we do face a growing dependency and right now it's approximately, as I said before, 50 to 54 percent. It's going to continue to grow. It's going to continue to grow in the Persian Gulf – dependency that's dangerous. It behooves each and every person to start examining their options, their use of energy, how it affects the environment, to make Connecticut a better place and to reduce that dependency. I think only in that way are we going to have a safe and sound future.



"I say that the individual can make a difference, but it's going to take everybody together." ■

The Natural Historian



Male cicada-killer, (Sphecius speciosus), *waiting for female wasp to fly by his perch.* (*Photos by Carl Rettenmeyer*)

Killer Wasps–A Case of Bad Press

by
Carl W. Rettenmeyer
Director
Connecticut State Museum of
Natural History
Professor of Ecology and
Evolutionary Biology
The University of Connecticut

DURING JULY AND AUGUST, large "killer wasps" will be alarming people in Connecticut. Long before "killer bees" existed or were named by sensationalizing journalists, killer wasps were found in this state. These killer wasps are much larger than killer bees; in fact, they are among the largest wasps found in the United States. They have a body length of 1.5 inches and wingspan of 2.75 inches, but their conspicuous behavior and loud buzzing causes frightened people to estimate that the wasps are twice as big.

Actually, unless you are a cicada, you probably do not have to fear these giant insects which should be called "cicada killers." There is no record of them killing any person. In fact, it is unlikely that anyone has ever been stung by one of these wasps without hurting the wasp first. You could force one to sting you if you accidentally stepped on one with bare feet, sat on it, or if you picked one up and pinched it. But if you do no harm to the wasps, these mild-mannered insects will go about their business and try to stay away from you.

Each July, the cicada killers crawl out of the ground where they have been maturing since the previous summer. The males emerge first and fly back and forth over the ground, cruising for a mate. Frequently the males land on the tips of vegetation where they alertly scan the area searching for those elusive females. When the larger females emerge from the ground, they are aggressively pursued by the males. Sometimes three to six males will attempt to grasp onto the back of a single female while she is in flight. When that happens, a mass of wiggling buzzing wasps falls to the ground. The struggle continues until one male be-

Female cicada-killer with two males on her back; probably only one will successfully mate with the female. Males die shortly after mating and do not help dig the nest or provision it.

comes the successful suitor.

Each female digs a burrow in the soil, creating a mound of loose dirt that may be three to six inches in diameter. As the female backs out of the burrow, she leaves a distinctive groove in the mound as she pushes the soil backward. The wasps tend to nest in aggregations of a few to more than 100 nests. The nests may be confined to a single square yard or occupy over 100 square yards, depending apparently on the wasps' preferences for sandy soil and their previous nesting success. The wasps are solitary, which means that each cicada killer makes its own nest; you will never see large numbers of wasps going in or out of a cicada killer's nest.

If you have a hundred nests in your lawn, you may not like the little mounds; but the wasps are helping to aerate the soil. You can mow the lawn right over the mounds without being stung by the wasps. In fact, most of the wasps flying back and forth over the nesting area are males which cannot sting. The female is busy digging a burrow about a foot deep which serves as the nest. Then she flies off to search for a cicada. These bugs feed on trees, often some distance from the wasp's nest. After finding a cicada, the wasp stings it and brings it back to the nest. If you are an orchard grower in Connecticut, you may consider the cicada killer a beneficial insect because it helps keep the cicada population somewhat lower and less likely to damage your trees.

The cicadas are bigger than the wasp and are so difficult to carry home that the wasp has trouble flying. When the female falls to the ground, she often drops her burden, runs up a plant stem to reorient herself, and then takes off again with her heavy load. During the journey back to the nest, the females frequently drag the cicada across the ground.

Upon reaching her nest, the wasp hauls the cicada underground and lays a single egg on it. Since the cicada has been stung, it is paralyzed so that it cannot fly or crawl back out of the underground nest. But it is not dead which insures fresh meat for the developing wasp larva.

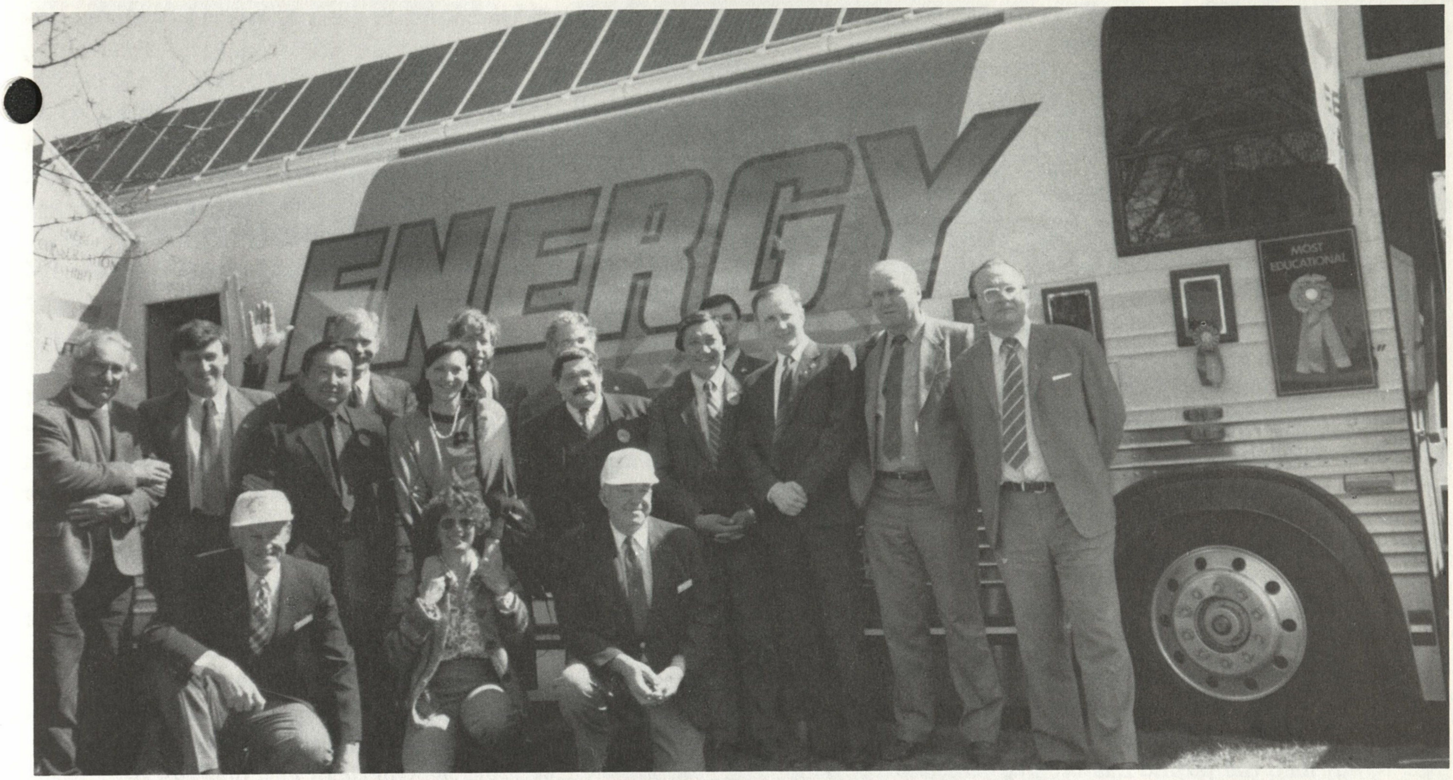
Wasps are frequently but incorrectly called "bees." That is comparable to misidentifying wolves as sheep. Bees are strict herbivores, living on pollen and nectar which they obtain from flowers. (There are a few parasitic or cuckoo bees which are carnivorous on other bees.) Bees evolved along with the flowering plants, and both groups of organisms require the other for survival. We all benefit because bees pollinate billions of flowers and make possible our abundance of raspberries, apples, and peaches, along with most other fruits and flowers.

WASPS, on the other hand, are primarily carnivores. They visit flowers and fruit to drink the sweet liquids which provide the energy the wasps need for their active life style. But wasps do not collect pollen, and the minor amount of pollination they do is mostly accidental. Wasps collect insects, spiders, or similar food to provide the protein essential for raising baby wasps. There may be close to 1,000 different species of wasps living in Connecticut, and no one has estimated how many billion insects they kill every year. You probably haven't considered wasps your friends, but without them thousands of other insects would become greater pests.

The cicada-killer mother never sees her offspring. After laying her egg, she closes her burrow and starts a second nest. After hatching some days later, the wasp larva starts feeding on its colossal meal. At first the tiny wasp larva looks like a caterpillar eating a cow, but the larva grows fast. It takes a big insect to feed one cicada-killer larva. Ultimately, the cicada is entirely consumed by the wasp, which then starts its metamorphosis from larva into adult. There are no more meals for the wasp until many months later when the adult emerges from its subterranean nest.

Please do not harm these fascinating creatures. They are essentially harmless to humans and you may find them just as interesting to watch as birds. They are one of the easiest insects to study and are part of the "balance of nature" that we should be attempting to preserve.

This article was contributed by The Connecticut State Museum of Natural History at The University of Connecticut in Storrs, which exhibits mounted birds of Connecticut, the largest mounted white shark on display in the eastern United States, "Videoplace" interactive video, Indian artifacts, and offers programs for teachers, children, and adults. For information, contact the Museum, UConn Box U-23, Storrs, CT 06269-3023; phone (203) 486-4460. ■



A delegation of Soviet environmentalists recently visited New England. Their concern was nothing less than the environmental future of the planet. (Photos by Lisa Garafola)

Glasnost, the Environment, and the Photovoltaic Cell

by
Lisa Garafola

ON APRIL 19, 1990, in a quaint New England town, there was a joining together, not only of old friends, but of two great and vitally important global issues -- *glasnost* and environmentalism. Representatives of the the U.S. and the U.S.S.R. met and planned a future characterized by good will and a mutual concern for the environment. The catalyst for this event -- photovoltaic (PV) cells.

"PV cells?" some would ask. "But we tried solar electricity in the 1970s, and it didn't work. The Soviets should know that." Scientists all over the world, however, are claiming a bright future for the photovoltaic cell. In fact, the largest PV project in the world attracted a delegation of Soviet environmentalists, engineers, and dignitaries to the small New England town of Gardner, Massachusetts. The Soviets were in the United States to participate in a bilateral American/Soviet environmental exchange called "The Ecology of Peace." The American delegation had visited the U.S.S.R. in October, 1989, and the Soviets visited the U.S. in April, 1990. Sponsors of the exchange included Solar Design Associates, Still River, Mass.; Promoting Enduring Peace, Woodmont, Conn.; and People's Action for Clean Energy, Canton, Conn.

GARDNER, MASSACHUSETTS, the new England town that has attracted worldwide attention, has been the focal point of a PV study involving three public buildings, two businesses, and 30 homes. In 1985, New England Electric System provided each of the participating homes with a $20,000 PV system, at no cost to the homeowners. So far, all is progressing smoothly; homeowners are pleased with the bargain PV systems, and New England Electric has gathered a wealth of information about solar electricity.

One of the most elegant qualities of solar electricity is its simplicity. The roof of each participating home in Gardner sports an array composed of PV cells that contain silicone. Chemical treatment of the silicone positively charges the upper layer of the cells and negatively charges the lower layer. When the PV cell absorbs sunlight, it creates an electric flow that produces direct current (DC) electricity. An inverter converts the DC power to alternating current (AC) power for use in the home, and the AC power supplies electricity to televisions, stereos, refrigerators, ovens, hot water heaters and electric lights.

What? That simple? No nasty pollutants? Could the world possibly become accustomed to an energy source that doesn't threaten the environment? Maybe the world has no choice.

As a result of the nuclear catastrophe at Chernobyl, the Soviets are very well informed in regard to the hazards of nuclear power. Of course, Americans are also quite knowledgeable in such matters. Last year, the Exxon Valdez disaster made us more aware of any environmental catastrophe. Janibeck Sharshenaliev, a Soviet engineer and deputy director of the Kirghiz Academy of Sciences, voiced our mutual concerns: "The whole world is on the edge of a great crisis. Energy sources that are economically efficient and environmentally benign are of the highest importance," said Sharshenaliev.

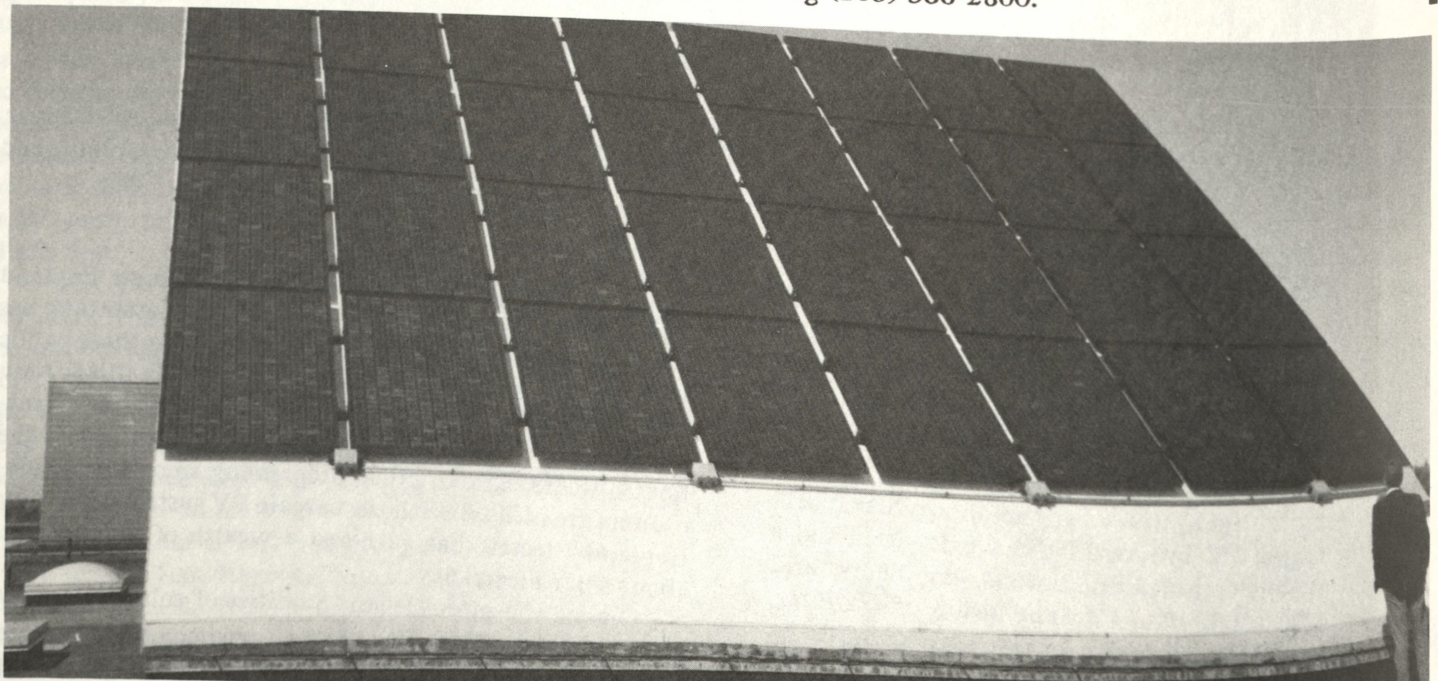
The Gardner project is a giant step on the road to the clean energy sources envisioned by Soviets and Americans alike. Not only has important scientific ground been explored, but also the public has been educated about clean energy alternatives. Of course, sooner or later, environmental altruism must meet economic reality. And the reality is that solar electricity is becoming a bargain. Since 1985, when the Gardner PV systems were purchased, the cost of a system has dropped from $20,000 to $12,000. Steven Strong, president of Solar Design Associates and a pioneer in the field of photovoltaics, believes the cost could sink as low as $4,000 by the end of the decade.

Over its lifetime, a PV system saves the green in the forests and the green in the pocket. In a typical non-solar Gardner house, the monthly electric bill is $48, the equivalent of 540 kilowatt hours of electricity. In the summer, a PV system produces 270 kilowatt hours of electricity slicing the electric bill in half. And these figures are based on run-of-the-mill electricity-guzzling appliances. Those who use energy efficient appliances can save even more.

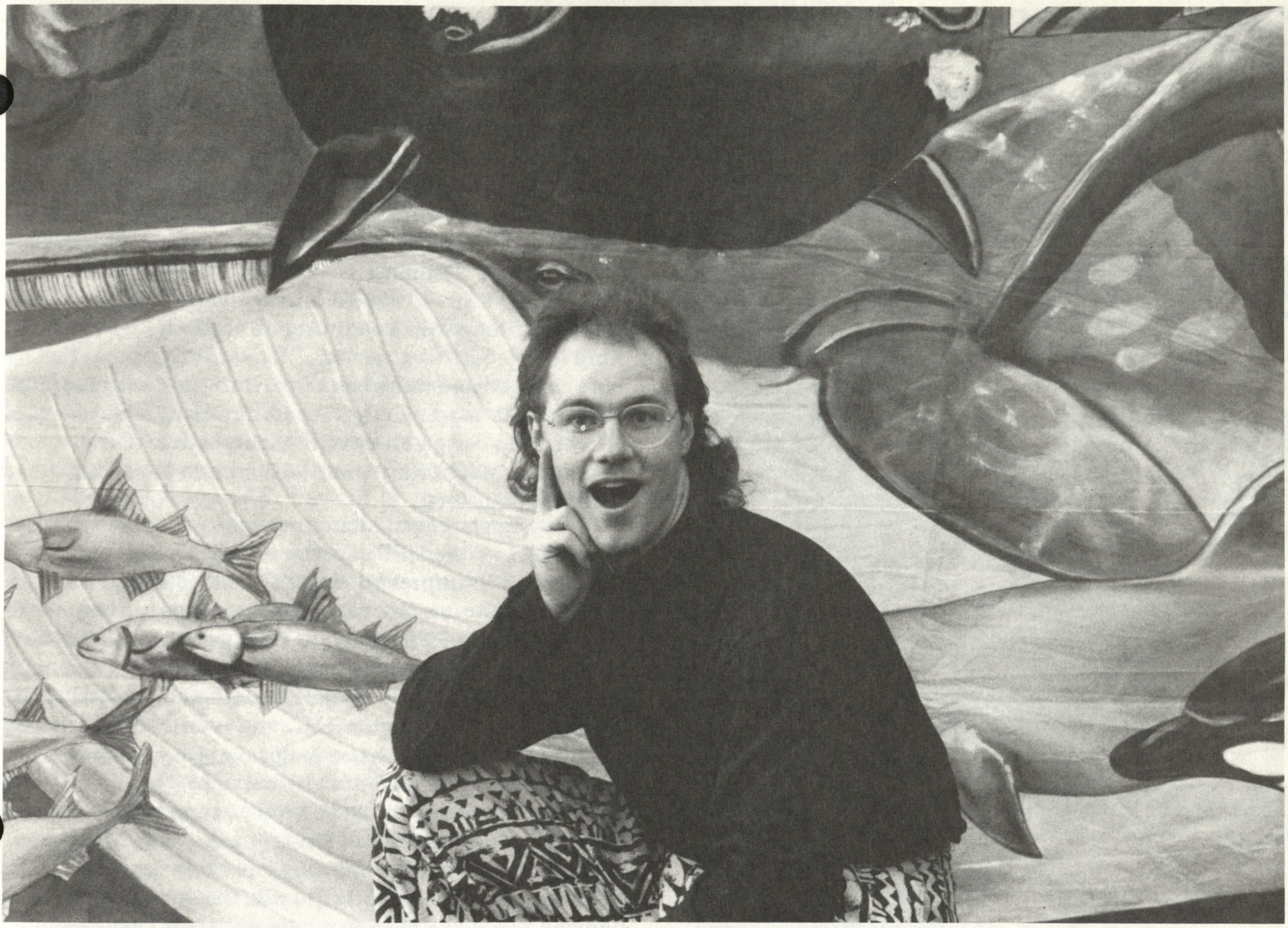
Photovoltaic technology is here, but it must be supported. The Japanese are vigorously exploring photovoltaics, and there has been speculation that if the PV industry does not develop in the U.S., this country may simply exchange Arab oil dependence for Japanese PV dependence.

It is hoped that the American/Soviet exchange that included the Gardner visit can forge the path to a different future, a future characterized by American/Soviet cooperation on environmental issues. The Ecology of Peace exchange is one of the first steps on the path to clean energy around the globe. These exchanges prove to be invaluable tools in implementing both *glasnost* and environmentalism. For example, in October, 1989, during the Soviet portion of the Ecology of Peace exchange, a tangible project for the future was planned. The prototype Soviet-American Center in Moscow will permanently display benign energy sources beginning in November of this year. Of course, the average American can observe benign energy in his own home if he chooses to utilize solar electricity.

For further information on alternative energy, please contact People's Action for Clean Energy at (203) 693-4377. The Energy Division of the Connecticut Office of Policy and Management publishes a guide to solar home building and remodeling which may be obtained by phoning (203) 566-2800. ■



The beauty of the photovoltaic cell is its simplicity and lack of pollutants. It may well be the energy source of the future.



Chris Rowlands is a high-energy combination of music, humor, real knowledge, and a heartfelt concern for the environment. (Photos by Susan Dorfman)

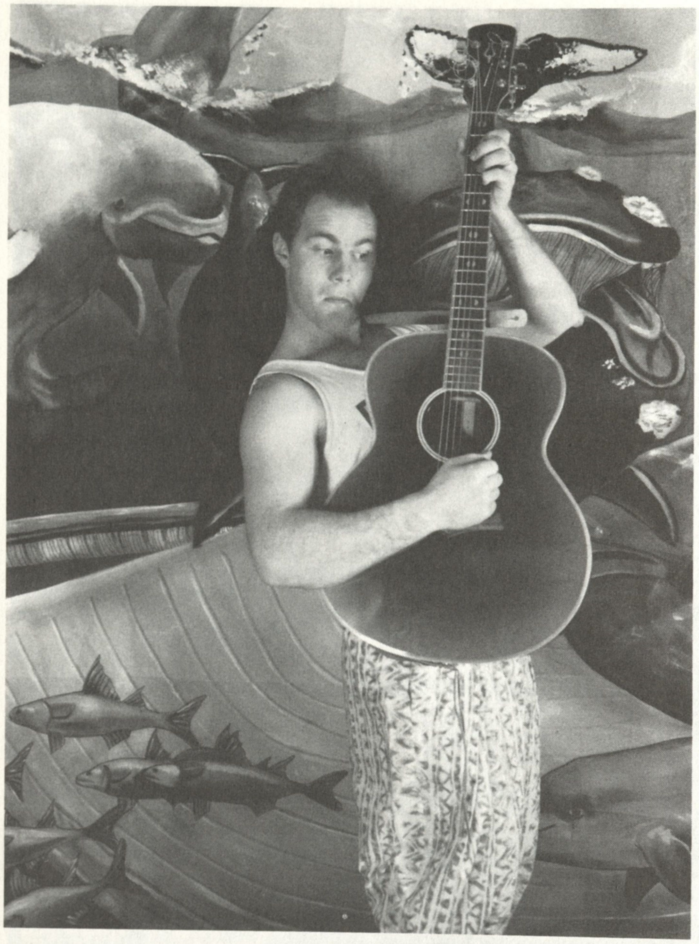
The Wild World of Chris Rowlands

by

Erica Jorgensen
Environmental Intern

CHRIS ROWLANDS STANDS ON STAGE, his green shirt and wildly-printed blue, green, and black baggy pants reflecting the colorful marine-life mural behind him. He smiles and taps his foot to the drum beats pouring out of the speakers. The children who have come to watch Chris Rowlands perform can't sit still -- they're dancing and clapping before he even starts to sing. Rowlands scans the crowd, pulls his guitar strap over his shoulder, and approaches the microphone. The captivation of yet another audience of Chris Rowlands has begun.

Chris Rowlands is a self-taught singer, songwriter, and artist from Coventry. This gifted 24-year-old performs shows on recycling and marine life for schools, fairs, and nature centers. His personality -- a high-energy combination of humor, real knowledge, and heartfelt concern -- enables him to charm and teach his audiences.



Rowlands has a magical ability to capture and hold the attention of all audiences.

ROWLANDS WAS RAISED IN DAYTON, OHIO. Although he never had lessons, drawing and singing came naturally to him. After graduating from high school, he enrolled at an art college, but didn't stay long. Rowlands describes this experience as "three days of orientation, two days of classes, and six hours of packing up my things."

After a brief stint with the Environmental Protection Agency, Rowlands went on the road with the Audubon Expedition Institute. For two years, he and 22 other students traveled all over the United States -- from Puget Sound, the Sierra Nevada, and Death Valley to the Everglades and Maine, as well as Newfoundland. While they did not take formal classes, they instead learned about the environment through direct observation. "If we were studying geology, we would go to a rock formation with a geologist," said Rowlands. The students visited with experts to learn about fish, animals, geography, the ocean, tidal pools, and natural history.

During the trip, Chris was still unsure of his career plans. "We were in the Southwest and I was sitting by a pond, and all these people from the group gathered around me to look at insects in the water, listening to me talk about them. People said that when I talked, they noticed things that they had never noticed before. I think it was just then that I found out that my talent was for teaching for turning people on to things."

During that expedition, he wrote hundreds of songs about the environment. One night, the group was gathered around a campfire, and Rowlands was playing his guitar and singing. Afterwards, a man approached to praise the performance. This man was Billy Brennan, a nationally-known environmental singer. In fact, Rowlands had long been an admirer of "Billy B." The meeting, said Rowlands, "was a shock." It was at that point that his life changed and his career as performing environmentalist began. It happened that the Connecticut DEP had asked Brennan to design an environmental education program. Brennan brought Rowlands with him to Connecticut, and the rest is history.

Rowlands began doing recycling shows over two years ago, as the DEP superhero, Ray Cycle. Schools and fairs were so impressed with his energetic and informative presentations that recently Rowlands has begun to do shows on marine life as well. He says that he "must have done about 500 shows" since he started, all over Connecticut as well as in New York, Rhode Island, Massachusetts, Long Island, Washington, D.C., and even Ohio and Oregon.

Chris Rowlands has a magical ability to capture and hold the attention of his audiences. Children don't realize that they're being taught as well as entertained. Once the children are seated, Rowlands breaks into a fast-paced tune about whales. Mid-song, he stops strumming his hand-made acoustic guitar to ask the crowd, "How long do you think the biggest whale is?" He is answered with scores of raised arms of children who think they know the answer. After a few guesses, the correct response -- 100 feet -- is received from a fifth grader. Rowlands congratulates the student and describes the size in terms that are easily pictured by elementary school-aged children. "If you put three school buses back to back, that would be about the size of a blue whale."

Then comes the topic of the whale diet. Rowlands dons a headdress with huge eyes and dangling pink limbs. "This is a crab larva. Looks kind of like Bart Simpson, doesn't it?" The children explode into giggles and grins. Rowlands then musically explains how baleen whales eat -- the whale takes in large amounts of water, then uses its gigantic tongue to push the water back out through the baleen filter, and eats the krill and other zooplankton which are too large to pass through back into the ocean. "Hey, man, it's getting dark in here," he says with a worried tone, imitating one of the trapped krill. "Whump! Hey, man, I can't get out! Help, I'm dying! Whaaaaaaaaaa!" Chris then bursts into a rock-and-roll song on baleen, and soon the students are singing the refrain along with him -- "Baleen screen, it's a one-way screen, zooplankton check in but they don't check out! Baleen, baleen!" Even the teachers join in.

"A blue whale eats over 10,000 pounds of krill in one day," says Rowlands. He then brings this unimaginable number down to the children's level. "Can you imagine driving up to MacDonald's and saying, 'Yeah, I'd like 40,000 quarter pounders'?" Next he shocks the students -- "A blue whale's arteries are so big that you could walk through them!"

Rowlands grows serious when he talks about right whales. "The reason they call it the right whale is basically because they were the right whale to kill. They were slower and easier to kill than the other whales and floated when they died. And they had a very rich blubber for oil. There used to be hundreds of thousands of right whales. Today we think there are less than 10,000." At this point the children are quiet. They understand how the greed of man has caused suffering for the animals.

The next subject is the food chain. The mood becomes lighter as Chris points to the surface of the sea on his mural. "These are phytoplankton -- small plants of the sea. They supply over 51 percent of the oxygen that we breathe." Audience members are invited onstage. "It takes 100 pounds of big fish to make only one pound of an orca whale," he informs the students before the song begins. The children onstage wiggle to the rap song, and get "eaten" by the animal on the next level of the chain. At the end, the orca whale, using bent arms as a mouth, "eats" the big fish, then clamps down on the microphone with a "Whomp!"

In his last song, Rowlands abandons the recorded synthesizer background music for just his guitar. With a voice reminiscent of James Taylor, he entreats the students to "Lend a helping hand" to save the earth. With the song over, and the children calm and still, he adds, "You can learn a lot more about the whales. There are lots of books in the library about whales, and your teachers can tell you about them." The youngsters have been given entertainment with a message.

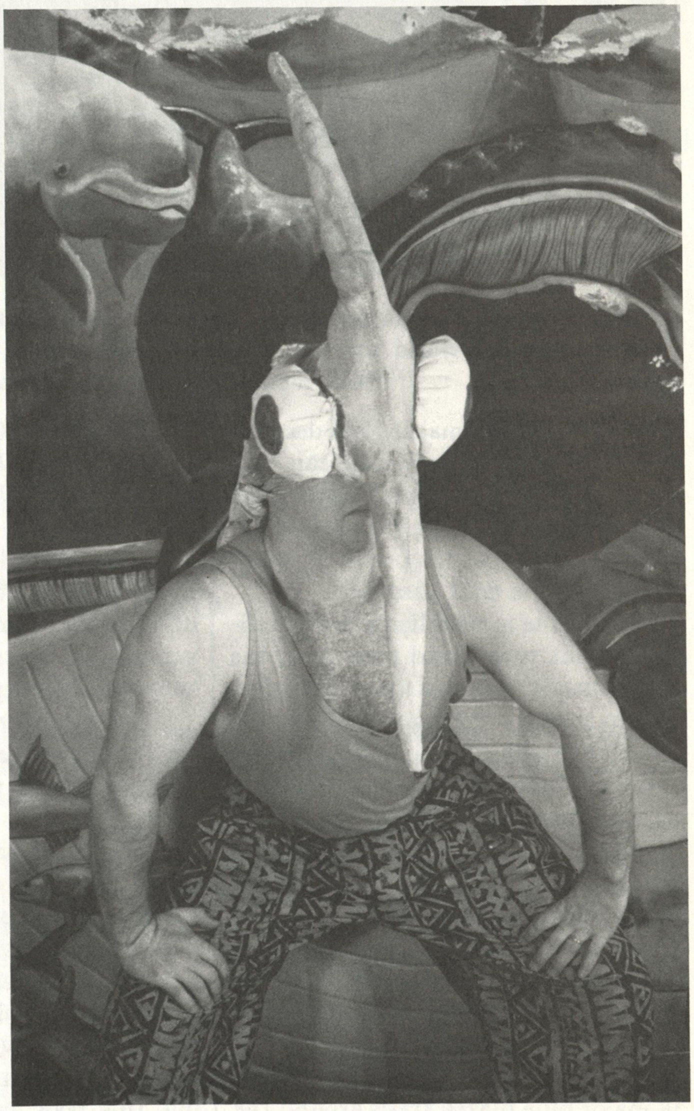
I LOVE WHAT I DO," says Chris Rowlands. "I'm just so completely content. I've never really been content in my life until now. I'm doing everything I ever wanted to do -- I get to do art, I get to do music, and I get to do the biggest thing to me which is teaching the kids about the planet. What matters to me is getting the kids excited enough so that they'll go out of the show and want to study whales."

And Rowlands smiles. "Kids *are* remembering my stuff. I'm finding that if I do a night show for a nature center, that the kids who have been to some of my other shows remember what a zooplankton is and other facts like that. That makes me feel good -- when I hear a kid remember the things I sing about."

While Chris Rowlands is a funny and delightful performer for children of all ages, he is also profoundly concerned for the future of the earth. It was during the Audubon Expedition that he first comprehended the gravity of the situation. During the trip, he visited Puget Sound in Washington State, where he saw, for the first time, a tidal pool. "It was an incredible place for me," he recalls. "And then I came home for Christmas break. I was watching the news, and learned that there was an oil spill off the coast. Puget Sound was one of the places hardest hit. It was then that I realized clearly how we're messing up the planet."

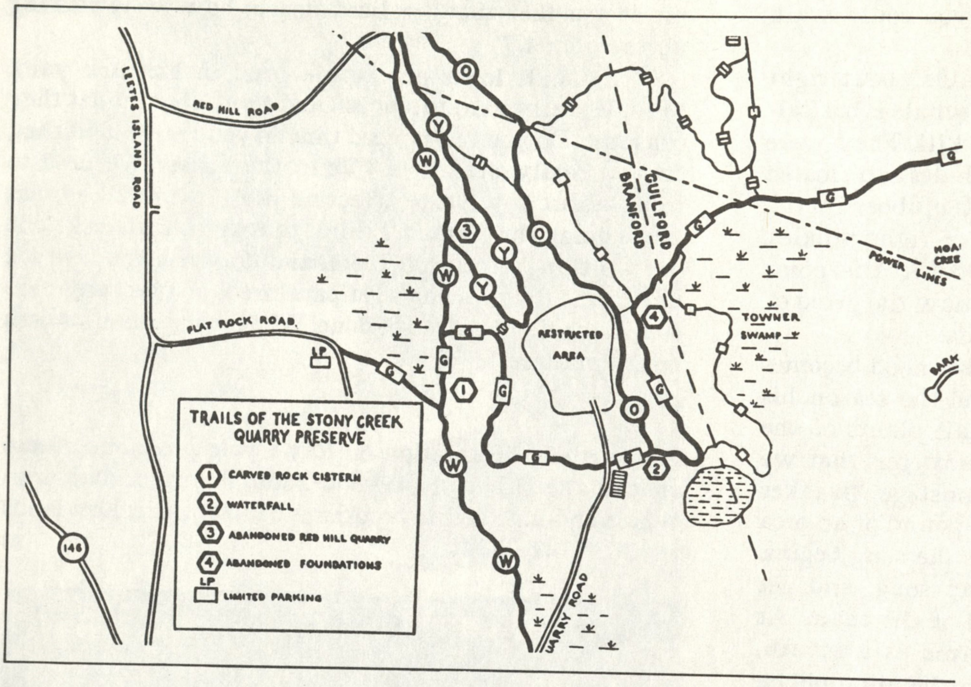
Rowlands looks out at the pond in his back yard. "People really need to sit back and *think* about what they consume. Do you really need this, do you really need that, do you really need five TVs in the house? We need to think about how we're affecting life -- to not take what we're doing for granted. I think that you should take one or two things, focus on them, and do what you can. It's important that we don't get paralyzed, just because there is so much that needs to be done. What every one of us does really matters."

For further information on Ray Cycle programs, please contact the DEP at (203) 566-2860. For information on whale and marine life programs, contact Chris Rowlands at (203) 742-0724. ■



"What's important is that after kids see my show, they want to learn more."

Map of the Month



The Best Trail Companion

by

Alan Levere

Senior Environmental Analyst

SOMETIMES, just making the decision on where to spend free time can be a stumbling block to a good day's hike. Where should I go, near home or far from home. How long will it take? What does the trail pass by?

Once able to establish a few conditions about where and how long, the rest is usually taken care of by referring to a decent trail guide. There are several available, but one of them is an old time favorite that has become a standard around the state.

For the 16th time since its first appearance in 1937, the *Connecticut Walk Book* has been released by the Connecticut Forest and Park Association. And that is good news for all of us. Review this guide and the decision-making process gets simpler.

The *Walk Book* has descriptions of 38 major blue blazed trails around the state. The additional side trails amount to dozens more options.

There are 30 trail maps included in the *Walk Book*, most of which cover several trails. When these *Walk Book* trail maps are used in combination with the printed text, a standard 7 1/2 minute USGS Topographic map, a pedometer and compass, a decent understanding of the trail, its challenges and what you can expect will be the result.

Occasionally, the descriptions of the trails include history and tidbits of geologic interest to watch for along the way.

When you do your pre-hike homework you will see by reviewing the maps and descriptions that many trails pass streams, rivers, and marshes and lead to high-point vistas and overlooks. Since typically where there is water there is wildlife, and on a clear day the overlooks should be far reaching, this book can set you up for a largely rewarding day in the field.

The *Walk Book* is divided into three separate sections: The first is the *Trails* descriptions, which constitutes the bulk of the text; *General Information* follows and includes descriptions of equipment, emergencies, state parks and general "Rules of the Road,"; and section three is the collection of *Trail Maps.*

For convenience, all the pages are removable. So for any hike, you need only carry the necessary sheets, not the entire book.

The 16th edition is nearly 200 pages in total length and is available for $14.95. If you dare to sample some of these less-visited trails, the rewards can be outstanding.

ONE OF THE BEST COMPANION maps for hiking and any general wandering around the state is our own *DEP Property Map.* If where to go remains a question, the *DEP Property Map* responds with over 500 places to get out and go to.

The DEP has mapped all the DEP-owned lands. Conveniently, the map is color-coded to indicate the seven types of areas: state parks and trails, wildlife management areas, DEP water bodies (lakes), salt water access (public boat launches), historic and natural history preserves, state forests, and a miscellaneous category.

This translates to several options for hiking, birdwatching, boating, or fishing, or just relaxing around the state.

The *DEP Property Map* measures 44 by 55 inches. At the scale of 1:125,000, one inch equals about two miles. Its price is $10.00.

In all, the 200,000 acres of DEP lands represent over 310 square miles, which really represents more 'go' than any of us probably have time for. But knowing the options for the times we do get out is what the *Walk Book* and this map is all about.

To order please include eight percent Connecticut sales tax and $2.00 shipping and handling. Checks are payable to DEP Publications. Our address is: DEP-NRC, Room 55, 165 Capitol Avenue, Hartford, CT 06106. ■

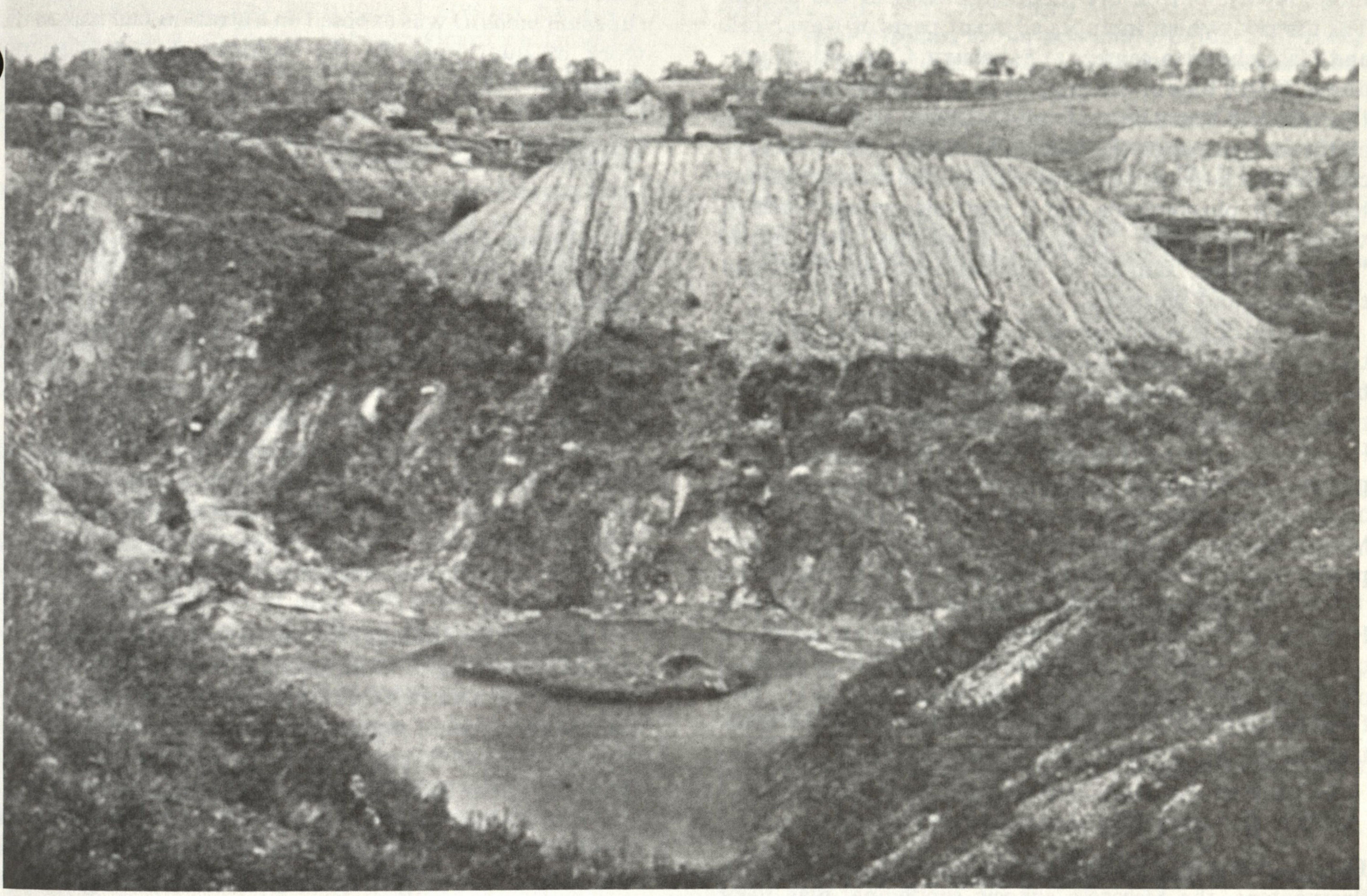


Figure 5. Abandoned pit at Ore Hill near Salisbury, Connecticut. At the time the photo was taken (1898 or earlier), the surface work had long since ceased and work was carried on at a depth of 150 to 200 feet below the surface, and beneath the pit is reported to have been honeycombed galleries. (Photo from Pynchon, 1899)

Connecticut's Historic Geologic Sites

by
Robert J. Altamura
Geologist
Connecticut Geological and
Natural History Survey
Natural Resources Center, DEP

(*The following is the second and final installment of an article which began in the June 1990 issue of* Connecticut Environment.)

WITHIN CONNECTICUT'S BOUNDARIES occurs a number of significant historic geologic sites. Connecticut has received considerable attention from geological scientists and the mining industry. Some of these sites have national significance. The following notes give some information on some of the outstanding geological historical sites in the state.

Geological sites are under constant threat due to development. Perhaps some of the sites below should be identified for preservation and management efforts so that they are not lost. Once these sites are lost, they are lost forever.

Ore Hill Iron Mine, Salisbury, Connecticut. The Ore Hill Mine (Figure 5) is an example of the iron mining operations of Connecticut referred to here as the "Salisbury Iron Mining District." The Salisbury district, centered at Salisbury, Connecticut, once was one of the most important iron ore-producing areas in the nation. The district, which includes adjacent parts of New York and Massachusetts, centers at Salisbury. Connecticut produced 35,018 tons of ore in 1880 (Harte, 1944), nearly all limonite and hematite ore from Salisbury and Kent. Most of the iron mines of the Salisbury district are at or near contacts with the Stockbridge marble. The ores reportedly had a low phosphorous and a high manganese content, which resulted in physical properties that made "Salisbury iron" famous for the manufacture of railroad car wheels and weapons.

Salisbury iron was used for the cannons and armor of the U.S.S. Constellation (now stationed in Baltimore Harbor), the U.S.S. Constitution ("Old Ironsides" -- now stationed in Boston), the cannons of New York City's Battery Park, and a chain across the Hudson River intended to prevent the British from passing northward during a part of the Revolutionary War (Harte, 1944). The Ore Hill Mine near Salisbury is believed to have been the largest producer of iron in the district (Harte, 1944; Hobbs, 1901).

In 1762, Ethan Allen bought an interest in the Ore Hill Iron Mine and built a forge and a blast furnace at the outlet of the Lake Wononscopomuc. A very large portion of the Colonists' cannon for the Revolutionary War came from that furnace, although by that time the investment had passed out of Allen's hands (Harte, 1944).

Portland Brownstone Quarries, Portland, Connecticut. Brownstone, the Mesozoic arkosic sandstone, was very fashionable in the late 1800s. In the latter decades of the 19th century, the brownstone quarrying industry in Portland was immensely prosperous. Rice and Foye (1927) of Wesleyan wrote: "For a number of decades a man who wanted to build a dwelling house of high grade in New York or Boston hardly dared to build anything but a brownstone front, and the brownstone came from the Jurassic of Connecticut and New Jersey."

The Portland quarries (Figure 6) were the king of the brownstone quarries in Connecticut, and perhaps in the country. Brownstone for use in buildings was shipped to New York, New Jersey, and as far away as California. An architectural style and look resulted from the availability of brownstone, the Portland being very highly prized. The brownstone era had a significant effect on the broad national patterns of U.S. history.

Quarry excavations have provided sedimentological and paleontological information of significance. Numerous geological studies have been conducted on those particular strata and this has led to a better understanding of these rocks. The most abundant fossils found in these quarries have been tracks and casts of tracks of dinosaurs. Most of these tracks were about six inches long and show three toes (a fourth rear toe very often did not leave an impression). One large track is reported to have been 20 inches in length. The museum at Wesleyan University, just across the river from the quarries, has a fine collection of dinosaur footprints, many obtained from these quarries. In 1874, a series of more than 20 tracks (species: *Otozoum moodu*) was exposed on a stratum laid bare in the work of quarrying. In the summer of that year, the American Association for the Advancement of Science met in Hartford, and a large party of geologists visited the quarries to view those tracks (Rice and Foye, 1927).

Strickland Pegmatite Quarry, Portland, Connecticut. The Strickland Pegmatite Quarry on the west flank of Collins Hill exhibits what may be the best pegmatite cross-section in the Middletown Pegmatite District. The nearly complete cross-section (the root is not exposed) clearly shows the relationships of the granitic intrusion and the host metamorphosed sedimentary rocks.

Commercial mining of feldspar in New England goes back to the year 1825. Quarrying at the Strickland site began as early as 1840 (Foye, 1922). The Strickland-Cramer site is one of about 75 to 100 granite pegmatite quarries in the state. Strickland, however, stands out in several ways.

A small percentage of Connecticut's pegmatites contain small but significant amounts of rare metals. Strickland and the associated Cramer Quarry do. Both are considered rare metal pegmatites. Thus, in addition to the typical mineral components of granite (i.e. quartz and feldsbar) there occur rare metal minerals such as beryl and tourmaline. Many of these rare metal minerals are beautifully colored and occur as well-developed crystals. Some material is of gem quality and numerous gemstones have been carved from minerals found here.

The pegmatite has a long and important scientific history. A preliminary search of the scientific literature resulted in the compilation of more than a dozen journal articles on Strickland. The New England Intercollegiate Geological Field Conference has conducted at least two

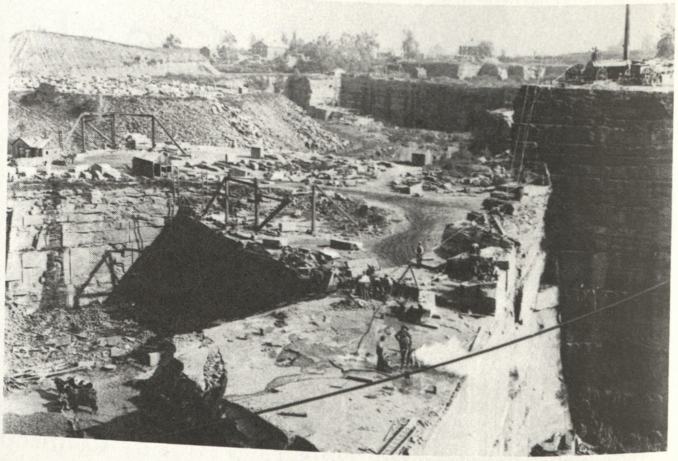


Figure 6. Quarry site and activities of the Portland Brownstone Quarries during 1889, Portland, Connecticut. Brownstone was very popular for building near the end of the 19th century and much of the brownstone for New York and Boston came from Portland. (Photo reproduced with permission of the Portland Library)

excursions to Strickland (Bannerman *et al.*, 1965; London, 1985). Mineralogical and petrological studies dominate the reports that were found, but significant radiometric age dating studies have also been a focus (e.g. Foye and Lane, 1934). Numerous articles have also appeared in many rockhound magazines.

In his publication, *The Minerals of Connecticut*, Schairer (1931), a chemist with the Carnegie Geophysical Laboratory in Washington D.C., described the site as a "mineralogist's paradise." Schairer probably based his statement on the fact that the minerals found here are high quality and of diverse nature. This fact has resulted in the popularity of Strickland as a teaching and collecting site.

Wolcott Brownstone Quarry, Manchester, Connecticut. The Wolcott Brownstone Quarry near the village of Buckland in Manchester, Connecticut, was once the most productive dinosaur bone locality in the Connecticut Valley. Three well-preserved skeletons of prosauropods (early plant-eating dinosaurs) plus two other fragmentary specimens were discovered. These skeletons were described in several papers by Marsh in the late 1800s (Galton, 1976). This site has yielded information of considerable scientific importance and could have been expected to yield additional data affecting theories, concepts, and ideas in science. However, the site was destroyed by recent development of a shopping mall that opened its doors in 1990. Preservation measures were ineffective in preserving this nationally significant locality.

For further information concerning these sites, the reader can contact the author at the Connecticut Geological and Natural History Survey, (203) 566-3540.

(Acknowledgement: Sidney Quarrier read the original manuscript for this article and provided helpful suggestions.)

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Nature Notes

Stalking the Wild Periwinkle

Text and Illustrations
by
Penni Sharp

SUMMER IN CONNECTICUT frequently means hot humid days. A string of such days will send many of us to the beach this year. There is just nothing like a trip to the beach to refresh body and spirit. Beaches offer relaxation and pleasure to swimmers, sunworshippers, picnickers, birders, and beachcombers. Almost everyone, at one time or another, has succumbed to the lure and romance of beachcombing. Who can resist the desire to see what the waters have deposited on the shore during tidal ebbs and flows? Unfortunately, the drift lines no longer contain purely natural, biodegradable treasures. Walking along the beach today, sadly, one is likely to encounter a strange assortment of plastics and other items.

But it is still possible to find true gifts from the sea, and it is with the hope of finding these treasures that we walk along the drift line left by a receding tide.

In this drift, one may find a variety of shell fragments, and where calm waters prevail, whole shells. Shell collecting is a popular hobby. Connecticut beaches will not, of course, yield the array of shells found on the west coast of Florida. But, along our coastline there is a modest diversity of small animals whose shells will wash ashore.

LOW TIDE is probably the best time to hunt for shells. During new and full moons, unusually low ebb tides occur. For the beachcomber, this is worth bearing in mind. Beachcombing can be very interesting after storms. Although the turbulent water may be hard on some shells, deep water specimens may be torn loose during storms and deposited on the beach.

Small, delicate shells are usually found following a calm time, high on the beach. Large shells should be looked for in areas where the tides have deposited large and coarse debris. Minute shells may be attached to or within seaweeds, driftwood, or larger shells.

Every shell once was "home" to an animal. By the time a shell washes up on the beach, it has usually lost all traces of the creature which made it and used it for shelter. Shell collecting is more interesting if one has some knowledge and understanding about the animal that once was present.

Common Periwinkle

(Littorina littore)

ANIMALS WITH SHELLS belong to the group or phylum *Mollusca*, a name meaning "soft-bodied." Members of this large group are commonly referred to as "mollusks." The soft body is generally protected by a calcareous exoskeleton, the shell. Shells are fashioned in a variety of sizes, shapes, forms, and colors. Their diversity is one of the reasons that they are such fascinating objects for collection and study.

There are two distinct types of mollusks -- those with double, or valvate, shells and those of a single unit. The single-shelled varieties are called "univalves" and belong in the class *gastropoda*. The others are known as "bivalves" and are members of the class *bivalvia*.

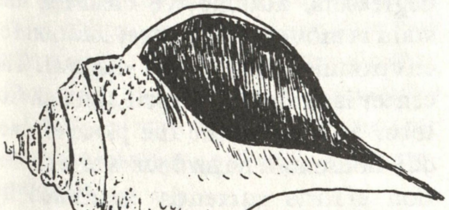
All mollusks share certain structural features. All have a "mantle," a fold in the body that secretes the calcareous, shell-forming material. Another feature unique to the mollusks is the muscular "foot" which is used for locomotion.

Among the univalves, some which are commonly found on Connecticut beaches, are the common periwinkle, the northern moon snail, and the channeled whelk.

THE COMMON PERIWINKLE (*Littorina littore*), is ubiquitous along Connecticut's rocky coast and is the winkle that covers rocks and wharf pilings. The periwinkle is not native to America and is said to have been introduced in Nova Scotia during the early 1800s. Periwinkles are vegetarians and feed upon algae. They are exposed during low tide and can tolerate fairly long periods out of water. Although not brightly colored, periwinkles have attractive markings and subtle hues of grays and browns. An abandoned periwinkle shell may provide a home for the hermit crab, a small crustacean that inhabits our shores.

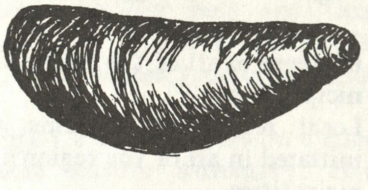
The northern moon shell (*Lunatia heros*) is a large snail that can be up to four inches across. It is uniform in color -- a pale, washed-out brown. The shell can have up to five convex whorls which flatten at the top. Moon snails prey on other mollusks, drilling a small round hole and smothering the victim with their extra large foot. Where moon snails are numerous, observers may notice round "collars" of sand. The snails secrete a gluey substance which binds grains of sand together. Within these collars, moon snails deposit their eggs.

The channeled whelk (*Busycon canaliculatum*) is the largest snail found on the Atlantic coast. The distinctive spiral shell separates whelks from other snails. They feed chiefly on bivalves, using their tapered anterior to pry open their prey, much the way we use a clam knife. Whelks are popular beach shells among collectors, and on our rocky coastline, it is a challenge to find one intact. Most beachcombers have probably encountered the interesting egg case of this mollusk. These are long strings of horny capsules, each containing hundreds of minute, perfect shells. The large fleshy foot of this and other whelks is known as "scungilli," and is a prized item in Italian cuisine.



Channeled Whelk
(Busycon canaliculatum)

NUMEROUS bivalve shells are found along the Connecticut coast. By the time the shells wash up on our beaches, the bivalves are usually no longer hinged, belying the fact that two shells once enclosed an animal within. Bivalves constitute a valuable economic resource in that clams, mussels, scallops, and oysters belong in this group.



Blue Mussel
(Mytilus edulis)

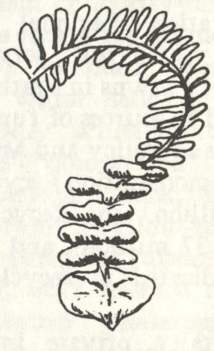
A commonly found shell is that of the hard clam or quahog (*Mercenaria mercenaria*). This clam has a thick white shell with a dark purple stain on the inside shell margin. Indians fashioned small beads known as "wampum" from these shells. The beads were strung into strands or belts and used as money. Purple beads were highly prized, and the clam's Latin name *Mercenaria* derives from its use as Indian money.

The quahog is the clam used in chowders. It is known commercially as the littleneck, cherrystone, or chowder clam, depending upon its size at harvest. Quahogs live in either sand or mud near the low tide line. They grow fairly rapidly and reach maturity, a size of three inches, within a few years. If not consumed by a gull or tossed into a chowderpot, a quahog may reach the age of 25 years.

The blue mussel (*Mytilus edulis*) is a glossy blue-black shell that has a pearly-coated violet interior. The blue mussel can reach a size of approximately four inches. Mussels are found amongst rocks of wharf pilings within the intertidal zone. They anchor themselves firmly to the substrate with tough threads, called byssus. Mussels are a tasty treat and can be gathered relatively easily. Unfortunately, in Connecticut, many areas, historically open for shellfishing, have been closed due to health reasons.

The razor clam (*Ensis directus*) is an unusually shaped bivalve in that it is a long narrow shell that can reach 10 inches in length and about one-and-a-half inches in width. This is an elusive mollusk that has the ability to burrow deeply and to remain firmly entrenched. Razor clams inhabit sandy intertidal zones. They dwell in an upright position and feed when the tide is in. When feeding, they move upwards and the tip of the shell protrudes slightly above the sand.

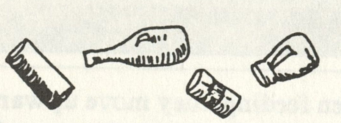
The bay scallop (*Argopecten irradians*) is a small-ribbed, symmetrical scallop whose shell has been a widely used motif in art and design. Bay scallops are also referred to as the "blue-eyed scallop" for the rows of tiny sapphire-like eyes which occur along the edge of the mantle. These eyes are actually somewhat functional and allow the scallop to sense oncoming prey.



Egg Case of Channeled Whelk

Bay scallopos live in eelgrass beds in relatively calm waters. They are quite mobile compared to other bivalves and move by a kind of jet propulsion. Strong contractions of the adductor muscle produce jets of water from the mantle cavity and propel the scallop along the sea floor. This large adductor muscle is the edible part of the scallop.

THESE ARE JUST A FEW of the many shells that are found along our coastline. If you plan to spend a few days or -- better yet -- a vacation at the shore, try searching for these and other shells of marine creatures. To add to your enjoyment of gathering shells, take along a field guide and read about the animals that once dwelt within the shells you collect. ■



Recycling News

THE LARGEST GRANT AWARDED to a recycling region in Connecticut thus far was signed in Hartford in April, 1990. State grant funds will pay for household recycling containers, a major public education campaign, and equipment for composting, other recycling tasks, and recycling vehicles.

The agreement between the DEP and the newly formed Southwest Connecticut Regional Recycling Operating Committee is in support of its Demonstration Regional Recycling Program which will serve 742,000 people in 17 towns in southwest Connecticut. The sources of funds include the Office of Policy and Management (OPM) Demonstration Recycling Fund ($1.68 million), the Recycling Trust Fund ($1.37 million), and state bond funds dedicated to recycling ($6.23 million).

A totally private intermediate processing center (IPC) will be operated in the Southwest Region, allowing the grant funds to be used on other parts of the regional program. The IPC is expected to be operationalin late 1990.

The municipal leaders of the Southwest Region, under the leadership of the Greater Bridgeport Regional Solid Waste Advisory Board, took the following steps to bring this grant to fruition:

- The Southwest Connecticut Regional Recycling Operating Committe (SWEROC) was formed to administer the regional recycling program.
- New Canaan, Stamford, and Stratford joined the original 14 Greater Bridgeport towns to form the new recycling region.
- Stratford offered to host the IPC.
- Fairfield County Recycling was chosen to provide a showcase IPC by December, 1990.
- Local recycling programs were initiated in all of the region's municipalities.
- Local recycling programs were initiated in all of the region's municipalities.
- A major public education campaign was launched on Earth Day

The efforts of Dominick DiGangi, president of SWEROC, Jerry Smith, vice president of SWEROC, and Valerie Knight, recycling manager for the region, were all invaluable in the negotiations process. In addition, Carolyn West of OPM, Energy Division, has consistently supported the development of this demonstration project as well as the DEP's other recycling demonstration project in Southeastern Connecticut.

PROGRESS IS ALSO BEING MADE in other recycling regions. The Southeastern Region (pop. 250,000), which received a $1.1 million recycling grant in October, 1987, has upgraded the Groton IPC, and the larger towns have instituted curbside recycling. The Northeast Region (pop. 70,000) received a $357,000 recycling grant last fall and has fully implemented a non-IPC program for 10 towns using the curbside sorting approach.

The CRRA has issued an Request For Proposal for an IPC to be located in Hartford on behalf of Mid-Connecticut and Capitol Region towns. The population of this region may exceed 1.0 million, making the participating municipalities eligible for a total grant which could exceed $12.0 million. The Tunxis Region (Bristol Project towns - pop. 250,000) has also issued an RFP for an IPC, and RFPs will soon be issued for facilities to serve the South Central Region (pop. 454,000) and the Housatonic Region (pop. 191,000). The Northwest/Litchfield Hills Region (pop. 100,000) may develop a non-IPC, curbside sorting program similar to that of the Northeast Region.

At least 149 of Connecticut's 169 municipalities have recycling programs in place for some required items. Forty-three of them have some curbside collection of recyclables, and 31 programs are mandatory for at least some items.

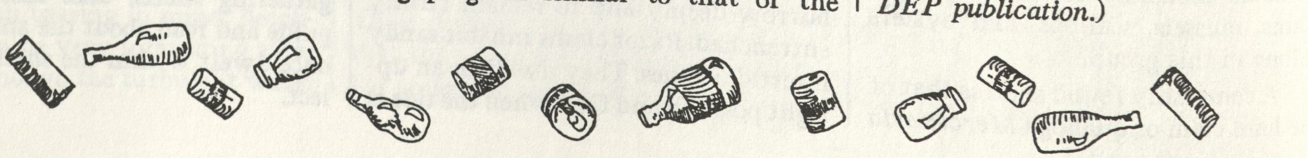
Some success stories include: Norwich, which expects to recycle more than 20 percent of its waste in 1990; Waterford, which is recycling 32 percent of its non-commercial waste; and Windsor Locks, which recycled 25 percent in the first year of its program.

All this confirms a recent UConn poll which indicates that 85 percent of Connecticut's residents support the mandatory recycling law.

THE FIRST REGIONAL CENTER for household hazardous waste has opened in the south central region of Connecticut. Participating towns now have the opportunity every Saturday morning to bring their hazardous substances like detergents, paints, garden pesticides, swimming pool chemicals, degreasers, automotive cleaners, and stain removers to a central location for environmentally sound disposal. The center is open from April through October and will take the place of one-day household hazardous waste collection efforts currently sponsored by many Connecticut communities.

Participating towns include Bethany, Branford, Cheshire, East Haven, Guilford, Hamden, Killingworth, Madison, Milford, New Haven, North Branford, North Haven, Orange, Wallingford, West Haven, and Woodbridge. More information on the center is available form Suzanna Benson at the Regional Water Authority, 624-6671, extension 372.

(This article originally appeared in the Garbage Gazette, *a Connecticut DEP publication.)* ■



The Bulletin Board

Coverts Project

The Coverts Project, sponsored by the Ruffed Grouse Society and The University of Connecticut Cooperative Extension System, is looking for woodland owners and other interested individuals who want to learn more about their forests and the wildlife that live in them in exchange for a commitment to share that knowledge.

A "covert" is a thicket that provides sheltering habitat for wildlife. The Coverts Project is a training and outreach program in woodland and wildlife management. Participants attend an in-depth, three-day seminar which combines indoor and outdoor training.

All costs of the seminar, including meals, lodging, and educational materials, are covered by the Ruffed Grouse Society, a national organization dedicated to improving the environment for forest wildlife. In exchange for receiving the training, participants are asked to return to their communities and share what they've learned with others. Participants are kept supplied with detailed reference materials that allow them to either answer questions on forest and wildlife management, or direct the questioner to the proper professionals.

This year's seminar will be held at the Yale University Forestry Camp on the 6,000-acre Great Mountain Forest in Norfolk, Connecticut, from September 13 to 16. For further information, contact a local Coverts Project cooperator, a local Extension System office, or Steve Broderick, Extension Forester, at the Extension Center, 139 Wolf Den Road, Brooklyn, CT 06234. Telephone 774-9600. ■

Pratt Valley Festival

Pratt Valley Festival: Saturday, July 14, 10:00 a.m. - 2:00 p.m. Connecticut Audubon Society Jane and George Pratt Valley Preserve, Town Farm Road, Bridgewater. Adults $3, children $2.

Enjoy a day outdoors on a bucolic 200-acre nature sanctuary. Horse-drawn wagon rides, farm animals, nature walks, live music, refreshments. For further information, call 259-6305. ■

Rare Bird Alert

by

Frank Mantlik

Vice President

Connecticut Ornithological Association

The Connecticut Rare Bird Alert (CT RBA) is a tape-recorded message, reachable by phoning (203) 254-3665, 24 hours a day, that informs interested birdwatchers of recent rarities in the state. In addition to giving details and directions to the birds, the message includes information on the more expected species, as well as announcements of upcoming meetings and lectures open to everyone.

This service, now in its 14th year, is co-sponsored by the Connecticut Ornithological Association and the Connecticut Audubon Council, at no cost to the caller other than the toll call. Based in Fairfield at the Birdcraft Museum of the Connecticut Audubon Society, the message is updated weekly, usually on Wednesday evenings.

The "voice" of the CT RBA is that of Connecticut Audubon Director (and well-known bird expert) Milan Bull. The service receives from 100 to 200 calls per week, depending upon the season and on the nature of the rarities. With the purchase of a new "corporate-strength" telephone answering machine three years ago, technical difficulties have been kept to a minimum.

Reports of rare bird sightings are funneled into the RBA via an existing COA network of experienced birders throughout the state, who screen and try to confirm exceptional sightings. However, anyone can report sightings of rare or unusual birds by contacting either Milan Bull (259-6305 or 255-8837), Tom Rockovansky (222-7777), or Frank Mantlik (838-1694). (Note: The key to continued success of this service is that we can only report information that we receive. So don't assume someone else will call us – phone in your sightings on a regular basis.)

During the past year, from May, 1989 to April, 1990, 150 species have been reported on the tape, many of these uncommon or locally-rare species. The rarities generating the most excitement have included; eared grebe, American white pelican, tricolored heron, greater white-fronted goose, snow goose ("blue morph"), Eurasian wigeon, Harlequin duck, black vulture, American swallow-tailed kite, bald eagle, peregrine falcon, Hudsonian godwit, buff-breasted sandpiper, ruff, Wilson's phalarope, little, common black-headed, and lesser black-backed gulls, caspian, Forster's and black terns, Townsend's solitaire, Lawrence's prothonotary, Kentucky, Connecticut, and mourning warblers, summer tanager, blue grosbeak, painted bunting, dickcissel, LeConte's sparrow, yellow-headed blackbird, boat-tailed grackle, and red and white-winged crossbills. How many of these did you see?

Many people have already realized a number of "life" birds and/or "state" birds due to the existence of this service. Response continues to be positive. Again, the key to the continued success depends on the prompt reporting of rarities to the RBA, which can then be updated in a matter of minutes. ■

National Park Service Award

The DEP has been presented with a Land and Water Conservation Fund 25th Anniversary Award for development at Meigs Point in Hammonasset State Park. The award was co-sponsored by the National Park Services and the National Recreation and Park Association (NRPA). The New England Regional Council of NRPA spearheaded the Awards presentation. Their goal is to create a better public awareness for the role that the parks and recreation profession has made in their local communities. The award was presented during ceremonies Tuesday evening to kick off NPRA's "Celebration of the Outdoors" at the Association's annual Northeast Training Institute.

In receiving the award, DEP was cited for "an outstanding effort in building a conservation and recreation legacy through the Land and Water Conservation Fund." The awards were designed to recognize exemplary parks and recreation projects that have received grants from the Land and Water Conservation Fund (L&WCF) and to celebrate the silver anniversary of the Fund itself. DEP received a L&WCF grant of $200,000 in 1983 for development of a bathhouse, life guard station, walkways and picnic shelter. Meigs Point was chosen for an award because these facilities effectively opened up this significant area to many more patrons, especially the disabled. Hammonasset is Connecticut's largest shore park and receives very heavy usage. Only three awards were presented in each of the New England states. The other two award winners in Connecticut were Riverside Park/Charter Oak Landing in Hartford and Owen Bell Park in Killingly.

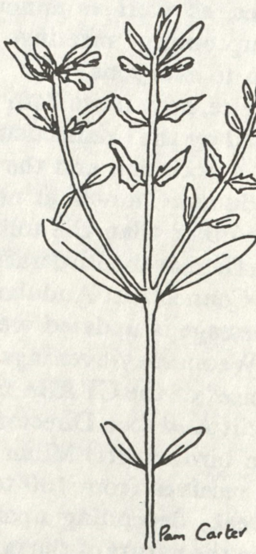
The Land and Water Conservation Fuind was established by Congress in 1965 to acquire land for national parks, forests and preserves and to provide matching grants-in-aid to state and local governments for the acquisition and development of outdoor recreation facilities. Since that time, Fund assistance totaling $3.6 billion has gone to assist over 35,000 state and local recreation projects nationwide. The money for the Fund comes mainly from lease receipts paid by the oil companies for rights to drill on the outer continental shelf. The state grants part of the Fund program is overseen by the National Park Service, and is administered in Connecticut by the Department of Environmental Protection.

The National Recreation and park Association, headquartered in Alexandria, Virgina, is a private, non-profit organization representing more than 21,000 individuals and institutions providing a wide range of park and recreation resources and services throughout the United States and abroad. Members are involved with the planning, development and management of virtually every type of local, state and federal park and recreation system. ■

Trailside Botanizer

Cow Wheat

by
Gale W. Carter
Illustration by
Pam Carter



Cow wheat (*Melampyrum lineare*) is a plant that might be easily overlooked, yet it is a species that has been around for a long time. It is a rather delicate, usually unbranched plant that, in spite of being rather inconspicuous, may grow to a height of up to 20 inches.

Cow wheat has opposite stalkless yellow-green leaves that may vary in shape from narrow to lance or egg-shaped. The lower leaves are usually only slightly toothed, while the upper leaves may have two to four bristle-like teeth at the base.

The calyx of the flower has four teeth. The upper two are longer than the lower ones.

The corolla is irregular, thin, and tube-like, becoming enlarged at the tip to form an upper and a lower lip. The upper lip is white and two-lobed, whereas the lower lip is yellow and three-lobed. There are four stamens of unequal length, two of them longer than the others, and one pistil.

Blooming time for cow wheat is from May to September. It is found in dry to moist open woods, in bogs and on rocky ledges.

The generic name comes from the Greek *melos*, meaning "black," and *pyron*, meaning "wheat." This describes the appearance of the black seeds of some species that were often found intermingled with threshed grain. The species name describes its narrow linear leaves.

The common name cow wheat originated with peasants of the Middle Ages. When they saw the plant appearing among threshed corn, they believed that the seeds were capable of being changed into wheat. In England, corn was historically referred to as wheat.

Cows and sheep relish this plant. In some countries cow wheat fodder is fed to cattle. Pigs, however, will eat only the seeds.

It has been said that when man has eaten the seeds of this plant with meat or drink, it has affected the brain causing headaches and drunkenness.

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The Night Sky

by

Francine Jackson

From reading the comics pages every day, most people are aware that the sun (from our perspective) travels along a regular path in the sky, commonly called the zodiac. This path is called the zodiac because – with the one exception of Libra, the Scales, which originally was part of the Scorpion – the constellations through which the path passes are all people or animals. Astronomically, this is called the ecliptic and, even though it is defined by the apparent motion of the sun, the moon and planets also generally travel in this section of the sky, although their positions can be several degrees above or below the ecliptic proper.

As these bodies travel through the sky, there are times when one of them passes in front of either another moving object or a background star. This is called an occultation, and is similar to your gazing outward into the ocean and seeing a ship pass in front of a faroff light. If you really wanted to, you could, from timing the ship's passage in front of the light, determine how long and how far from you the ship is. An occultation of two heavenly bodies can do that and more, depending on the objects involved. The moon in August is occulting three planets: Jupiter on the 18th, Venus on the 19th, and Mercury on the 22nd. Unfortunately for us, though, all of these occultations will be visible from other places, but if you see the moon on those days, you will be able to identify three of our bright planets by their proximity to the moon.

Incidentally, a special case of an occultation is an eclipse, the most spectacular of which is the total solar eclipse, when the moon completely covers the disk of the sun, and we see the filimentous outer "atmosphere," the corona. We are having one on July 22 – well, not exactly we. You have to go to Finland or the Soviet Union to see it well, and it will only last about a minute and a half. If you decide the Arctic Circle is not your idea of a perfect summer vacation, next year's total eclipse will be longer and in more ideal locales. Details forthcoming. ■

Letters to the Editor

Every year Connecticut residents receive an abundance of junk mail. If you have a mailbox, you are subjected to a barage of junk mail. If one stops to consider the number of trees cut each year to produce mail which often has no value to anyone – I don't even open this material – a real sense of waste is realized.

Recently, *The Hartford Courant* supplied an address which will end approximately 70 percent of the unwanted mail, save many trees, and provide a sense of particpation in saving our environment. The address is:

Mail Preference Service
Direct Marketing Assoc.
11 West 42nd Street
Box 3861
New York, NY 10163-3861

Ask that your name be removed from all mailing lists.

Steve Klobukowski
Senior Sanitary Engineer
Dept. of Health Service

In response to your request for suggestions and comments: Your publication is so superior that no suggestion is possible.

Mrs. Anna Barron
Middletown

All your articles are great. My favorite is still Francine Jackson's "Night Sky."

Nancy Kowalczyk
Middletown

The recent article by Allan Williams on the morality of junk mail should be submitted to an appropriate national magazine. It was great. It was welcome and long overdue.

Janet Aley
Westport

Endnote

When we are at peace within our own hearts, we shall be at peace with everyone and with our Mother the Earth.

When we recognize that our planet itself is a living organism co-evolving with humankind, we shall become worthy of stewardship.

When we see ourselves as stewards of our planet and not as owners and masters of it, there shall be lasting satisfaction from our labors.

When we accept the concept of Right Livelihood as the basic right of all, we shall have respect for one another.

When we respect the sacredness of all life, we shall be truly free.

When we free ourselves from our attachment to our ego-personalities, we shall be able to experience our Oneness.

When we experience our Oneness -- our total connectedness with all beings -- we shall be at peace within our own hearts.

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